

**Amendments to the Claims:**

This listing of claims will replace all prior versions and listings of claims in the application:

**Listing of Claims:**

Claim 1 (currently amended): A material shortage simulation management system for calculating quantities of material shortage relating to manufacturing orders, the system comprising:

a database configured for storing data used in procedures of material shortage simulations;

a data obtaining unit configured for obtaining the data from the database;

a computing unit configured for calculating material requirement quantities and available inventories according to obtained data, and for determining quantities of material shortage according to the material requirement quantities and the available inventories; [[and]]

a judging unit configured for determining whether it is necessary to purchase material and adjust related distributed inventories when shortage of the materials occurs, and for ascertaining whether material shortage simulations of all materials in a manufacturing order have been finished; and

a material adjustment unit configured for allotting the related distributed inventories to replenish the available inventories when it is necessary to adjust the distributed inventories.

Claim 2 (canceled)

Claim 3 (original): The material shortage simulation management system according to claim 1, wherein the data stored in the database comprise manufacturing orders, current inventory records, distributed inventory records and purchase orders.

Claim 4 (original): The material shortage simulation management system according to claim 3, wherein each of the manufacturing orders comprises a plurality of bills of material and production routings.

Claim 5 (original): A material shortage simulation management method for calculating quantities of material shortage relating to manufacturing orders, the method comprising the steps of:

- obtaining a manufacturing order;
- reading data on a material from a bill of material (BOM) of the manufacturing order;
- calculating a shortage quantity of the material;
- determining whether it is necessary to purchase the material;
- determining whether it is necessary to adjust a related distributed inventory of the material, if it is not necessary to purchase the material;
- allotting the distributed inventory of the material if it is necessary to adjust the distributed inventory;
- determining whether material shortage simulations of all materials in the manufacturing order have been finished;
- reading data on another material from the BOM if material shortage simulations of all materials have not been finished, and repeating above of the steps accordingly; and
- distributing the manufacturing order to one or more corresponding work centers if and when material shortage simulations of all materials have been finished.

Claim 6 (original): The method according to claim 5, wherein the step of calculating a shortage quantity of the material comprises a step of calculating a gross requirement quantity and a requirement date of the material.

Claim 7 (currently amended): The method according to claim [[5]] 6, wherein the step of calculating a shortage quantity of the material further comprises a step of calculating an available inventory of the material.

Claim 8 (currently amended): The method according to claim [[5]] 7, wherein the step of calculating a shortage quantity of the material further comprises a step of calculating a predicted delivery quantity of the material before the requirement date.

Claim 9 (currently amended): A material shortage simulation management method for calculating quantities of material shortage relating to manufacturing orders, the method comprising the steps of:

- (a) obtaining a manufacturing order;
- (b) checking material related to the order in inventory;
- (c) calculating a shortage quantity of said material in inventory based upon a scheduled production plan of the order;
- (d) if shortage, ~~determining either~~ purchasing the material or reallocating the material, which is currently designated to another manufacturing order, to the order; and
- (e) repeating steps (b)-(d) until all materials related to the order have experienced material shortage simulation.

Claim 10 (new): The method according to claim 8, wherein the shortage quantity of the material is calculated according to the gross requirement quantity, the available inventory and the predicted delivery quantity of the material.